

## **Hormonal imbalances, chronic low-grade inflammation, and microbiota disbalance play a central role in obesity**

Renowned journal "Frontiers in Endocrinology" with current review on the state of research

**Today, obesity (BMI greater than 30) is considered a serious medical condition and a public health threat. A recently published review in "Frontiers in Endocrinology" shows that its causes are to be sought in the interplay between the hormonal, nervous and immune system. In addition, chronic low-grade inflammation and disturbances in the gut microbiota can trigger a vicious cycle that leads to obesity. Diet and lifestyle change alone do not always lead to sustainable weight loss and medication and surgery might have side effects. Therefore, there is need for new strategies. Also published in October in this context is a study of more than 11,000 patients in Switzerland over a 20-year period. The study shows how a combination of acupuncture with a specific low carbohydrate diet can greatly reduce body weight.**

*"Acupuncture as multi-targeted therapy for the multifactorial disease obesity: a complex neuro-endocrine-immune interplay" review, Frontiers in Endocrinology, September 18, 2023:*

<https://www.frontiersin.org/articles/10.3389/fendo.2023.1236370/full>

The evaluation of more than 200 scientific studies worldwide, published in the journal Frontiers in Endocrinology, shows how acupuncture affects the metabolism and the hormonal system. "The review gives a clear overview of the mechanisms of action of medical acupuncture in the treatment of obesity," classifies Dr. med. Raymond Landgraaf, who is the lead physician performing the review and works in Switzerland. In particular, the study represents an important step forward in the investigation of the causes of obesity. From a scientific point of view, Landgraaf explains, it is now clear that "poor diet and lack of exercise are only two factors in obesity and not the main causes. Neuroendocrine disbalance, chronic low -grade inflammation and disbalance in the gut microbiota are crucial in the development of obesity. Landgraaf therefore calls for "more in-depth research here and especially for an acupuncture-diet combination. After all, obesity not only causes years of suffering for the people affected, but also high economic costs. Therefore, there is a strong need for new treatment strategies."

### **Acupuncture as a targeted therapeutic solution for complex clinical pictures**

It is known that acupuncture has been proven to influence the metabolism in the body. Obesity is caused by an imbalance between energy intake and consumption, mainly due to a western lifestyle and unbalanced dietary habits that lead to an increase in adipose tissue. It is often complicated by metabolic disorders due to insulin resistance leading to hyperglycemia, dyslipidemia, and hypertension (metabolic syndrome). In addition, several studies have shown an association between high BMI and a wide range of non-communicable diseases, such as cardiovascular disease, type 2 diabetes mellitus, various malignancies, rheumatic diseases, chronic kidney disease, acute respiratory infections such as COVID-19, and mental disorders. The use of acupuncture in the

treatment of overweight and obesity has been the subject of research in recent decades and has been shown to be a safe and effective complementary treatment for obesity.

## **What happens in a body with excess weight from a scientific point of view?**

From a scientific perspective, obesity is based on an imbalance of a complex, multidirectional interplay of the neuroendocrine and the immune system, as well as the microbiota and gut-brain axis, involving multiple molecular and cellular pathways.

In homeostasis, these interactions are well coordinated, but in pathology, this interaction is disturbed. Research has shown that the neurophysiological effect of acupuncture appears to be coordinated through activation of the central nervous system. This is essential for the regulation of the autonomic nervous system and consequently for hormonal and neuroimmune regulation.

Because of these complex mechanisms, the experimental and clinical studies reviewed for this study suggest that acupuncture may serve as a versatile, multi-target regulatory therapy in the treatment of metabolic disorders such as obesity. Several studies have found evidence for the efficacy of acupuncture, particularly in the treatment of obesity, as well as for its underlying neuro-endocrine mechanisms.

## **WHO recommendation on the use of acupuncture**

Due to its clinical efficacy, cost-effectiveness, and low side effects, acupuncture is recommended by the WHO for a variety of diseases. It is based on a system different from modern Western medicine, and current research is mainly focused on clarifying its neurobiological mechanisms. To understand the physiological and biological mechanisms of acupuncture, extensive basic and clinical research has been conducted on both animal and human models modulating mechanisms have been further explored due to the rapid advances in biological techniques. The neuro-endocrine and immunological regulatory mechanisms of acupuncture are now no longer a black box.

## **Quotes from the authors of the meta-study in *Frontiers in Endocrinology*:**

**Dr. med. Raymond Landgraaf, Lugano:** "Obesity is a very complex and misunderstood disease that requires a multi-faceted approach. And acupuncture in combination with diet can be an answer."

**Dr. med. Massimo Fumagalli, Lugano:** "The combination of acupuncture and diet not only allows weight loss, but also helps with many other problems such as anxiety and pain."

## **About Sinomedica**

Sinomedica was founded in 2001 in Lugano by Dr. med Massimo Fumagalli, and Riccardo Braglia. Sinomedica is a leading Swiss healthcare company, the largest provider of medical acupuncture in Switzerland and one of the leading in Europe. Sinomedica has one of the largest clinical databases of acupuncture treatments and expertise, which, combined with the latest scientific knowledge, allows for optimal, patient-centered medical care.



Sinomedica has practices in Zurich, Basel, Lausanne, Geneva, Lugano, Locarno and Chiasso. In 2023, the new practice will open in the center of Bern. Other locations in Switzerland are under construction. Sinomedica's expansion into nearby foreign countries is being planned.

[www.sinomedica.com](http://www.sinomedica.com)

**More information and contact with the authors:**

Marc Aubert, Sinomedica Responsible for Marketing and Communication,  
[marc.aubert@sinomedica.com](mailto:marc.aubert@sinomedica.com) T +41 79 240 89 11

Stephan Oehen, Oehen PR, [stephan.oehen@oehen.ch](mailto:stephan.oehen@oehen.ch) T +41 43 541 10 07